

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A controller employed in a data recorder to control interruption and restart of recording data, wherein the data recorder records on a recording medium data stored in a buffer memory by emitting a laser beam against the recording medium, the laser beam being generated at a relatively high level and or a relatively low level during a writing operation, wherein the laser beam at the relatively high power level forms a recording pit on a recording layer of the recording medium and the laser beam at the relatively low level does not form a recording pit on the recording layer of the recording medium, the controller comprising:

a buffer underrun determination circuit for determining a buffer underrun warning state ~~whether or not the buffer memory is in a state in which buffer underrun is likely to occur~~ based on the amount of data stored in the buffer memory;

a system control circuit for interrupting data recording only if the laser beam is generated at the relatively low power level, the system control circuit including:

an address memory for storing at least one of an address of the recording medium and

an address of the buffer memory when data recording on the recording medium is interrupted, each address indicating a location of data when the recording interruption occurred;

a synchronizing circuit for sequentially reading the data recorded on the recording medium prior to the recording interruption and the data stored in the buffer memory prior to the recording interruption and synchronizing the recorded data and the stored data based on a synchronizing signal of a subcode;

restart circuitry for restarting data recording on the recording medium based on the address stored in the address memory ~~and;~~

~~interrupt control circuitry for interrupting data recording if the laser beam is generated at the relatively low power level when the buffer underrun determination circuit determines that the amount of data in the buffer memory is likely to become null and cause the buffer memory to become empty.~~

2. (Currently Amended) The controller according to claim 1, wherein the data includes synch pattern data, the laser beam is generated at the relatively low power level and or the relatively high power level in accordance with the sync pattern data, and the interrupt control circuit interrupts data recording when the laser beam is generated at the relatively low power level in accordance with the synch pattern data.

3. (Original) The controller according to claim 2, wherein the data is recorded in the recording medium in sector units, each sector including sector address data, and wherein the address memory stores the sector address data where the recording interruption occurred.

4. (Currently Amended) A controller for a data recorder, wherein the data recorder records data on a recording medium by emitting a laser beam against the recording medium, the controller comprising:

a buffer underrun determination circuit for determining ~~whether or not a buffer memory is in a state in which buffer underrun is likely to occur~~ a buffer underrun warning state based on the amount of data stored in the buffer memory;

a laser drive circuit for generating a laser drive signal and for controlling the power level of the laser beam; and

an interrupt control circuit for controlling the laser drive circuit to continue recording ~~operation until the buffer underrun determination circuit determines that the buffer memory is in a state in which buffer underrun is likely to occur~~ determines that the buffer underrun warning state exists and the laser beam is generated at the low power level; and to interrupt the recording operation only when the buffer underrun determination circuit ~~determines that the buffer memory is in a state in which buffer underrun is likely to occur~~ determines that the buffer underrun warning state exists and the laser beam is generated at the low power level.

5. (Currently Amended) A method for interrupting data recording in a data recorder to prevent the occurrence of a buffer underrun error, wherein the data recorder records on a recording medium data stored in a buffer memory by emitting a laser beam against the recording medium, the method comprising:

determining whether ~~or not the buffer memory of the data recorder is in a state in which buffer underrun is likely to occur~~ a buffer underrun warning state exists, based on the amount of data stored in the buffer memory;

continuing recording until the data recorder enters a predetermined state in which the laser beam is generated at a low power level after ~~determining that the buffer memory is in a state in which buffer underrun is likely to occur~~ determining that the buffer underrun warning state exists; and

interrupting the recording operation only when the data recorder enters the predetermined state.

6. (Currently Amended) A method for interrupting and restarting data recording in a data recorder to prevent the occurrence of a buffer underrun error, wherein the data recorder records on a recording medium data stored in a buffer memory by emitting a laser beam against the recording medium, the method comprising:

determining whether ~~or not the buffer memory is in a state in which buffer underrun is likely to occur~~ a buffer underrun warning state exists, based on the amount of data stored in the buffer memory;

interrupting data recording ~~if the laser beam is generated at a low power level in response to determining that the buffer memory is in the state in which buffer underrun is likely to occur~~;

sending a recording interrupt signal to an address memory in response to interrupting data recording;

storing in an address memory at least one of an address of the recording medium and an address of the buffer memory when data recording on the recording medium is interrupted, the address indicating a location of data when the recording interruption occurred;

sequentially reading the data recorded on the recording medium prior to the recording interruption; and

restarting data recording on the recording medium based on the address stored in the address memory;

wherein data recording is interrupted only if the laser beam is generated at a low power level after determining that the buffer underrun warning state exists.

7. (Original) The method according to claim 6, wherein said restarting data recording is performed when the laser beam is generated at a low power level.

8. (Currently Amended) The controller according to claim 4, wherein the interrupt control circuit controls the laser drive circuit to restart data recording when the laser beam is generated at the ~~relatively~~ low power level.

9. (Original) The controller according to claim 4, further comprising:
an address memory for storing at least one of an address of the recording medium and an address of the buffer memory when data recording on the recording medium is interrupted, each address indicating a location of data when the recording interruption occurred;
wherein the interrupt control circuit controls the laser drive circuit to restart data recording based on the address stored in the address memory.

10. (New) The controller according to claim 1, further comprising a recording control circuit for causing the system control circuit to interrupt data recording when a buffer underrun warning state exists and the laser beam is generated at the relatively low power level.